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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/017,975	12/13/2001	Leonard S. Golding	PD-201162	8370

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Patent Docket Administration  
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EXAMINER

SHARMA, SUJATHA R

ART UNIT	PAPER NUMBER
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2684

DATE MAILED: 09/10/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/017,975

Applicant(s)

GOLDING, LEONARD S.

Examiner

Sujatha Sharma

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 13 December 2001.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-28 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-28 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

*Claim Rejections - 35 USC § 102*

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

2. Claims 1 and 17 are rejected under 35 U.S.C. 102(e) as being anticipated by LaPrade [US 2002/0177403].

Regarding claims 1,17, LaPrade discloses a broadband communication system using satellites in elliptical orbits inclined to the equatorial plane. LaPrade further discloses a satellite communication system, comprising:

- at least one gateway station (see Fig.1, ground terminals 1,2 or 3)
- at least one satellite having a polar orbit said at least one satellite adapted to provide single hop transpolar communication between two gateways separated by as much as 180° in longitude (see page 1, paragraph 7, page 4 paragraph 32, lines 9-13)
- and at least one antenna connected to said at least one gateway station for tracking said at least one satellite (page 2, paragraph 28)

Regarding claims 3 and 19, LaPrade discloses a system wherein said polar orbit comprises an elliptical orbit. See page 1, paragraph 3.

Regarding claims 5 and 21, LaPrade discloses a system wherein said communication system comprises 4 satellites. See page 4, paragraph 32, lines 14-18.

Regarding claims 6 and 22, LaPrade further discloses a system wherein an apogee for said system is about 40,000 km. See table 1.

Regarding claims 7 and 23, LaPrade further discloses a system wherein said 2 gateways are located within latitude of about 25 degrees to 30 degrees north. See page 6, paragraph 41.

Regarding claims 8 and 24, LaPrade further discloses a system wherein said antenna has a minimum elevation angle of 5 degrees. See page 6, paragraph 40.

Regarding claims 10 and 26, LaPrade further discloses a system wherein atleast one antenna points towards a pole of the earth where it is tracking the satellite in the polar orbit. See page 2, paragraph 28.

Regarding claims 11 and 27, LaPrade further discloses a system wherein the said pole comprises atleast a north pole. See Fig. 9.

Regarding claims 12 and 28, LaPrade further discloses a system wherein the frequency of the antenna comprises of K<sub>a</sub> band. See page 2, paragraph 28.

Regarding claim 13, LaPrade discloses a system wherein said satellite comprises a transpolar satellite. Longitude. See page 1, paragraph 7, page 4 paragraph 32, lines 9-13.

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Regarding claim 14, LaPrade discloses a system wherein said communication system comprises 3 satellites. See page 4, paragraph 32, lines 14-18.

Regarding claim 15, LaPrade further discloses a system wherein said satellite system comprises a pair of antennas connected to said gateway for tracking satellites. See Fig. 1, antennas 6 and paragraph 29.

Regarding claim 16, LaPrade discloses a system wherein said communication system comprises 6 satellites. See page 4, paragraph 32, lines 14-18.

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 2 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over LaPrade [US 2002/0177403] .

Regarding claims 2 and 8, Laprade discloses all the limitations as claimed. However he does not specifically disclose a method where in the active portion of the polar orbit is defined by 78 degree latitude.

However the examiner takes official notice that it would have been obvious to have the active region defined by 78 degree latitude since the satellite will then be launched in close proximity to the north pole and hence operate efficiently in the polar orbit.

5. Claims 4 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over LaPrade [US 2002/0177403] in view of Stuart [US 5,666,648].

Regarding claim 4, LaPrade discloses all the limitations as claimed. However he does not disclose a system wherein said polar orbit comprises a circular orbit.

Stuart, in the same field of endeavor, discloses a system wherein said polar orbit comprises a circular orbit.

See col. 4, lines 38-48.

Therefore it would have been obvious to one with ordinary skill in the art at the time the invention was made to provide the above teaching of William to LaPrade in order to provide affordable worldwide service resulting in a competitive advantage over other satellite based provider services.

6. Claims 9 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over LaPrade [US 2002/0177403] in view of Higgins [US 20030034422].

Regarding claim 9, LaPrade discloses all the limitations as claimed. However he fails to disclose a method wherein the propagation delay between two ground stations for said system ranges from about 250-300 ms.

Higgins, in the same field of endeavor, discloses a method where the roundtrip delay in a geosynchronous satellite system is large. The examiner takes official notice that it is well known in the art that a round trip delay of over 250 ms to 300 ms exists in a geosynchronous satellite system. Higgins further discloses that the delay in non-geosynchronous systems is much lower.

Therefore it would have been obvious to one with ordinary skill in the art at the time the invention was made to provide the above teachings of Higgins to LaPrade to have a delay of 250-300 ms in a single hop system in order to improve the performance of the system.

*Conclusion*

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Castiel [US 5,582,367]      Elliptical orbit satellite, system and deployment with controllable coverage characteristic

Dosiere [US 5,471,641]      Telecommunications network having switching centers for linking satellites

Williams [US 5,971,324]      Multiple altitude satellite-relay system and method

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sujatha Sharma whose telephone number is 703-305-5298. The examiner can normally be reached on Mon-Fri 7.30am - 4.00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nay Maung can be reached on 703-308-7745. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Sujatha Sharma  
Aug 30, 2004



**NICK CORSARO**  
**PRIMARY EXAMINER**